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ABSTRACT

This document contains two papers on connections between work and health and policy options for improving the health of working families. "Foreword" (James A. Auerbach) places the two papers in the context of recent research on the connections between work, family, and health. Chapter 1's overview addresses the changing nature of work, the new economy, and recent demographic trends. Chapter 2: The Impact of Work on Employees and Family Health examines the health effects of job security, income, work organization, health and pension benefits, work schedules, workplace stress, occupational health, socioeconomic status across the life course, and family and sick leave. Chapter 3: Policy Options outlines these three strategies: (1) focus on the individual and the job; (2) encourage the business sector to adopt supportive policies; and (3) develop and expand government policy. "Further Implications for Policy" (James A. Auerbach) weighs the effectiveness of work-life programs, family medical leave and paid leave, unemployment insurance, and childcare and elder care in improving the balance between work, family, and health. He concludes by urging policymakers to adopt policies based on the following principles: work redesign; paid leave and family care; reduced hours and flexibility; women in leadership positions, worker voice, community empowerment; and work-family councils. (MN)

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Improving the Health of Working Families:

Research Connections Between Work and Health

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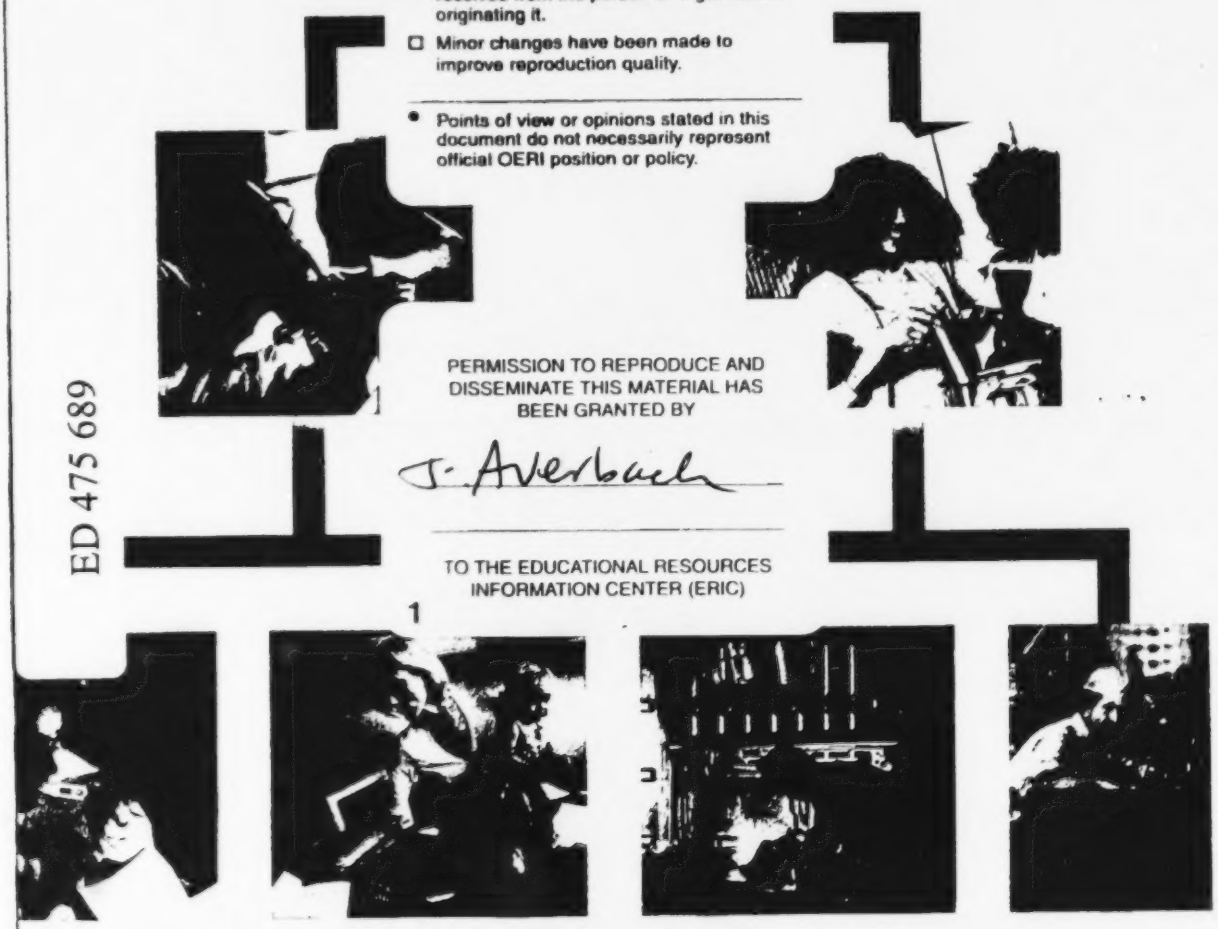

by Irene H. Yen and John W. Frank

with

Further Implications for Policy

by James A. Auerbach

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NATIONAL POLICY ASSOCIATION
Committee on New American Realities

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Foreword

The Committee on New American Realities (NAR) has examined the interrelationships between work, family, and health at its meetings over the past two years, which led to the commissioning of this study by Irene Yen and John Frank, *Improving the Health of Working Families: Research Connections Between Work and Health*. The paper is an extension of the NAR Committee's earlier study of the relationships between income, socioeconomic status, and health that focused on the social determinants of health, an issue poorly understood by the general public as well as by those who influence policy and practice. Despite the fact that many countries take the links between social determinants and health as a given, the United States rarely considers the impact of social and economic policy on health.

To better understand these issues and their implications for public policy, the National Policy Association (NPA), with the financial support of 15 federal health agencies and several foundations and academic institutions, sponsored a national conference in 2000 on "Income, Socioeconomic Status, and Health." NPA subsequently published *Improving Health: It Doesn't Take a Revolution*, followed by a major work titled *Income, Socioeconomic Status, and Health: Exploring the Relationships.*[1] Among the important findings in this emerging field is the strong relationship, or gradient, between an individual's health and his/her job classification or income. For every ascending rung on the socioeconomic ladder, there is a corresponding improvement in health.

A 2001 study by the Sloan Work-Family Network and the MIT Sloan School of Management, titled *Integrating Work and Family Life: A Holistic Approach*, notes: "Work and family life have always been interdependent, but increased employment of mothers, rising family hours of work, today's service-intensive globalizing economy, and the trend toward long work hours for some and inadequate family income for others have rendered this interdependence both more visible and more problematic."[2] The changing patterns of the workforce in the past half century, including the move toward a division of labor in which both men and women are breadwinners, occurred "without redesigning work or occupational career paths and

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without making new provision for family care. The result is a policy lag that has produced a care crisis and a career dilemma."[3]

In *Reflections on the Connections Between Work and Health*, authors Ruth Brousseau and Irene Yen argue that it is crucial to understand the central importance of work for individuals, families, and society as well as the multiple relationships between work and health.[4] They believe that a healthy workforce is important to a healthy economy, noting that health expenditures in California alone were estimated to be $137 billion in 1996, almost 12 percent of the state's gross domestic product. The authors add: "Private employers bear a significant portion of those costs, including mandated contributions to short- and long-term disability insurance as well as workers compensation and voluntary provision of health insurance benefits. They must also absorb the cost of workdays lost to illness and other conditions, such as depression, which can undermine productivity."[5] Old paradigms of work and family are falling away. We need to change our attitudes and our policies about work and family so that we have a work system that fits the new economy and contemporary family structure.

The NAR Committee actively promotes the achievement of a more competitive, productive, and equitable U.S. economy and society. At its biannual meetings and through its commissioned studies, the Committee sponsors open, nonpartisan analyses and frank discussions about critical economic and social issues facing the nation and the world. It is the Committee's hope that this report will help to foster a growing consensus in the public policy discussion on the challenge to balance the demands of work, family, and health.

James A. Auerbach
NPA Senior Vice President and
NAR Committee Director

NOTES

1. J.A. Auerbach, B.K. Krimgold, and B. Lefkowitz, *Improving Health: It Doesn't Take a Revolution* (Washington, DC: National Policy Association/National Academy for Health Services Research and Health Policy, 2000); and J.A. Auerbach and B.K. Krimgold (eds.), *Income, Socioeconomic Status, and Health: Exploring the Relationships* (Washington, DC: National Policy Association/National Academy for Health Services Research and Health Policy, 2001).

2. L. Bailyn, R. Drago, and T.A. Kochan, *Integrating Work and Family Life: A Holistic Approach* (Sloan Work-Family Policy Network, MIT Sloan School of Management, September 14, 2001).

3. Ibid., pp. 5-6.

4. R. Brousseau and I.H. Yen, *Reflections on the Connections Between Work and Health* (San Francisco, CA: California Wellness Foundation, 1999).

5. Ibid., p. 3.

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Irene H. Yen is a social epidemiologist at the Institute for Health and Aging, University of California-San Francisco. Her current research interests are the influence of work and neighborhood environments on health, health effects of racial discrimination, and social inequalities of health. She was one of the designers of the California Work and Health Survey (CWHS), a three-year representative survey of Californians that addressed health and employment circumstances, and the Project Director for the 2000 CWHS conference on "Employment and Health Policies for Californians over 50." Previously, Dr. Yen worked on the Muni Health and Safety Study investigating work stress and health among San Francisco bus drivers. She has also been a consultant to the California Wellness Foundation, coauthoring a monograph on the research connections between work and health.

John W. Frank is Director of the Canadian Institute of Population and Public Health. As a physician-epidemiologist with special expertise in prevention, his main area of interest is the determinants of health status at the population level. He was previously Adjunct Professor, School of Public Health, University of California-Berkeley. Dr. Frank was the founding Director of Research at the Institute for Work and Health in Toronto, which aims to identify preventable causes of work-related disability and ways to improve rehabilitation. He is a Fellow at the Canadian Institute for Advanced Research Population Health Program and a Professor in the Department of Public Health Sciences at the University of Toronto.

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Overview

Employers are concerned about work-family issues as they relate to recruitment and retention. In fact, family circumstances and the extent to which workplaces support or accommodate those circumstances contribute to employee satisfaction and performance. More important, *The 1997 National Study of the Changing Workforce* conducted by the Families and Work Institute found that work is a significant source of employees' personal problems.[1] Jobs with heavy demands and unsupportive workplace environments can negatively affect workers' personal lives as well as work performance. In addition to the potential social and emotional effects of jobs on workers and their families, jobs can also impact physical and mental health.

The features of the new economy, as highlighted in the next section, are an important influence on the type and characteristics of available work. In turn, changes at work affect the health of families in a variety of ways. This report summarizes recent scientific evidence on these issues and presents some options for policy.

THE CHANGING NATURE OF WORK

The New Economy

Until the recent economic recession, strong economic growth generated considerable discussion about a so-called new economy. The description of the new economy varies widely, but it is often characterized by (1) an increase in the growth rate of productivity and the role of technology; (2) an increase in globalization and an attendant rise in competition for labor and goods; (3) the emergence of an information age with knowledge workers and the customization of information as product; and (4) changes in management structure including downsizing, outsourcing, and just-in-time production.

The new economy provides a set of working conditions that differs from that of the "old" economy. Old economy work,

predominantly manufacturing rather than services, fell into two discrete categories. Salaried workers were paid to design and supervise production processes or to market the resulting goods, and they had job security. Wage workers were paid to produce goods, and they were subject to periodic layoffs.

The new economy involves a melding of working conditions, with an increasing proportion of all workers involved in the design of production processes. Most are also subject to employment insecurity and to alternative forms of employment.[2] In addition, of course, a much greater percentage of today's overall workforce is engaged in the service sector than in manufacturing.

In terms of employment insecurity, the share of workers employed by temporary agencies grew 60 percent between 1991 and 1995. This proportion increased 26 percent between 1995 and 1999.

In terms of alternative forms of employment, while some manufacturing sector jobs historically involved second and third shift work, even service and financial sector jobs today increasingly entail evening and night shifts. According to the U.S. Bureau of Labor Statistics (BLS), between 1991 and 1997, the number of white collar employees working evenings or nights increased 11 percent, while the number of blue collar employees working those hours grew 6 percent.

Demographic Trends

Demographic changes also influence who is at work. There are three key trends: the increase in women in the workforce; the overall aging of the population; and the growth in the ethnic diversity of the working age population.

Almost 85 percent of U.S. mothers who were working before they had children return to work before their child is age one. The employment rates of mother-only families with some income from welfare grew from 40.4 percent in 1995 to 56 percent in 1998. Among employed single parents, more than one-fourth (27 percent) are men. About one-half (46 percent) of wage and salaried workers have children under age 18 who live with them at least half the time. More than 40 percent of children under age 5 spend 35 hours or more per week in nonparental care, and another 25 percent spend 15 to 35

hours in such care. Partners and relatives are the primary source of care for two-thirds of prekindergarten-aged children.

As the working population ages, worker health issues will become increasingly prominent, as will care giving for older family members. Almost 4 out of 10 working people gave unpaid assistance to their parents in 1995, with one-half providing the equivalent of one or more days per month.[3] According to *The 1997 National Study of the Changing Workforce*, more than one-third of workers with elder care responsibilities reduced their work hours or took time off to provide that care, with employed men just as likely as employed women to do so.

Regarding the third key demographic trend, the increasing ethnic diversity of the workforce, only 58 percent of new entrants in the labor force in the 1990s were estimated to be native-born Whites, with 22 percent expected to be immigrants and the remainder mostly African Americans and Latinos.[4] By 2006, more than 25 percent of the workforce is projected to be non-White, compared with 20 percent in 1986.[5]

NOTES

1. Families and Work Institute, *The 1997 National Study of the Changing Workforce: Executive Summary* (New York, 1997).

2. P. Osterman, *Employment Futures: Reorganization, Dislocation, and Public Policy* (New York: Oxford University Press, 1988).

3. J. Heymann, *The Widening Gap: Why America's Working Families Are in Jeopardy and What Can Be Done about It* (New York: Basic Books, 2000).

4. Towers Perrin and Hudson Institute, *Workforce 2000: Competing in a Seller's Market* (Valhalla, NY: Towers Perrin, 1990).

5. D. Jamieson and J. O'Mara, *Managing Workforce 2000: Gaining the Diversity Advantage* (San Francisco, CA: Jossey-Bass Publishers, 1991), p. 241.

2

The Impact of Work on Employee and Family Health

This chapter describes different pathways through which work can influence health status as well as the implications of work for health. Having a job is assumed to be beneficial to health, based on research indicating that losing a job or fearing a job loss are harmful to health. Most people work to earn a wage. Money is a key tool for maintaining health. In addition, work is the most common source of health insurance. Also important for health is the structure of work, which includes the number of hours worked, the time of day of the shift, the degree of flexibility in the work schedule, and whether the job is permanent or temporary. The social environment of the workplace and how the individual fits into it (which may lead to varying levels of job stress) is another key aspect that can influence health. Finally, the physical work environment, including the potential exposure to toxins, and the physical demands of work can directly affect health.

WORK AND EMPLOYEE HEALTH

Job Security

A large body of research shows that unemployment is bad for health. Unemployed people have higher mortality rates than those employed.[1] People who are laid off report more stress, ill health, and disability than those who retain their jobs.[2] However, people who are employed but do not have job security also suffer adverse health consequences such as increased weight, heart disease, and high cholesterol levels.[3] Job insecurity is one of the characteristics of the new economy. According to one study that measured job insecurity on a 6 point scale ranging from "secure" to "insecure," job insecurity increased from 3.5 to 4.5 between the 1970s and the 1990s. Further, according to a survey by the U.S. Department of Labor (DOL), more than 8.5 percent of men and 9.8 percent of women are in jobs of uncertain or limited duration.[4]

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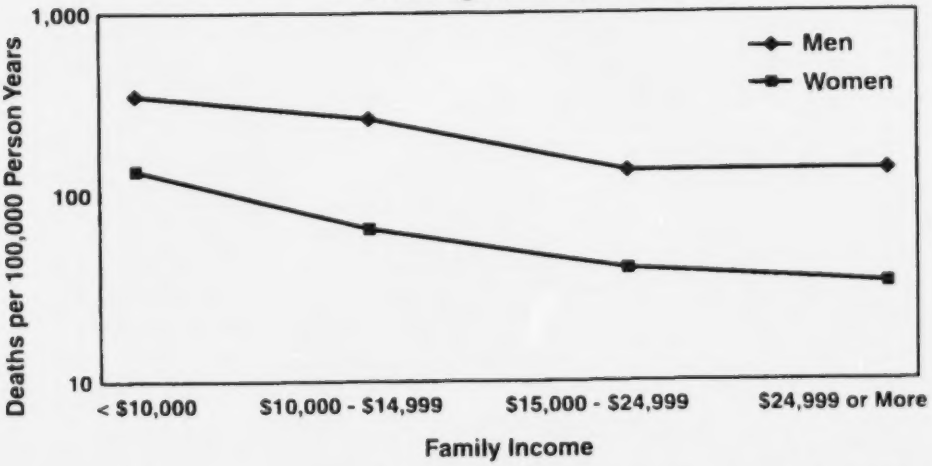
Income

Income is one of the strongest predictors of almost all health measures. People with lower income have more morbidity and higher mortality rates.[5] To provide just a few examples, family income is associated with heart disease death rates.[6] Figure 1 demonstrates that as family income increased between 1979 and 1989, death rates from heart disease decreased. Among men aged 25 to 64, heart disease mortality for those with a 1980 income of less than $10,000 was 2.5 times that of men with incomes of $25,000 or more. The poorest women in the same age range were 3.4 times as likely to die from heart disease as those with the highest incomes.

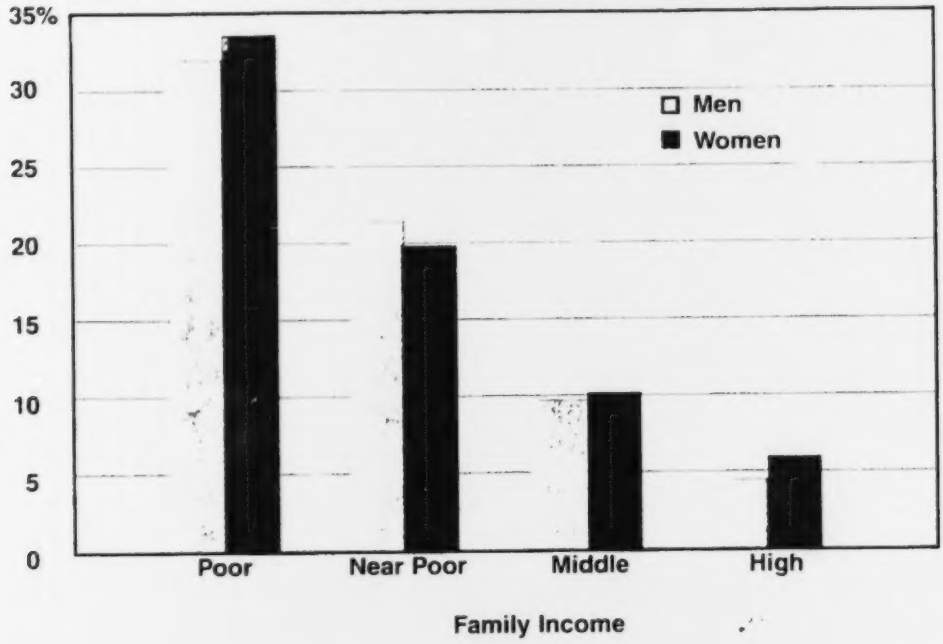
Studies have shown that self-perceived health, which incorporates physical and emotional aspects of health, is a powerful predictor of mortality and physical functioning.[7] Figure 2 shows the age-adjusted percentages of U.S. adults reporting fair or poor health in 1995 by family income. The figure indicates that men in poor households were 1.5 times more likely to report fair or poor health than those near the poverty line and 7.4 times more likely than men in the highest income households. Similarly, women in poor households were 1.6 times as likely to report fair or poor health as women near the poverty line and 5.4 times as likely as women in the highest income households.

FIGURE 1
Heart Disease Death Rates among Adults Age 25-64 by Family Income, U.S. Average Annual, 1979-89



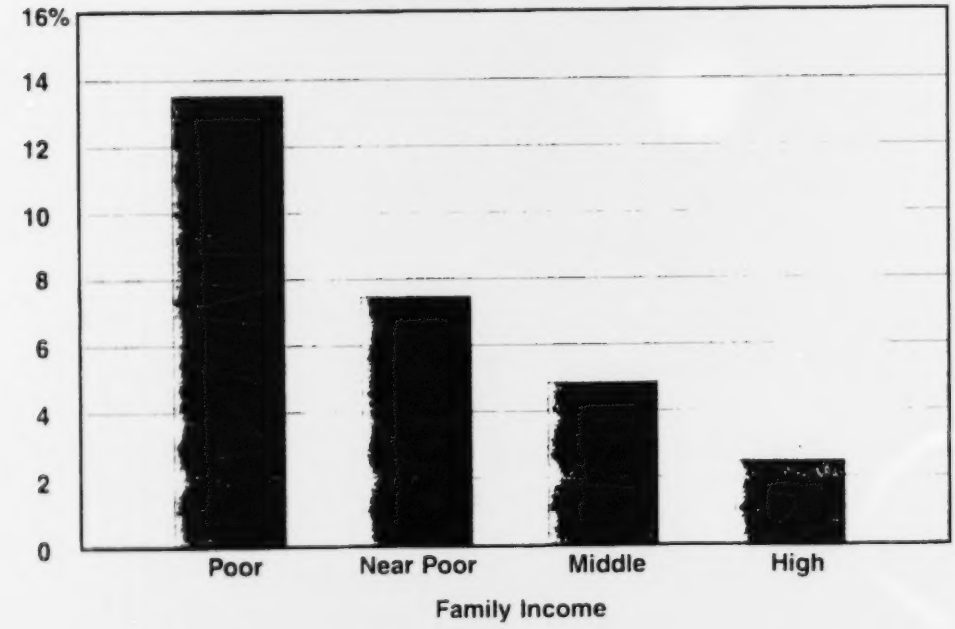
Source: E. Pamuk et al., *Socioeconomic Status and Health Chartbook. Health, United States, 1998* (Hyattsville, MD: National Center for Health Statistics, 1998).

FIGURE 2
Fair or Poor Perceived Health among Age-Adjusted
U.S. Adults by Family Income, 1995



Source: See Figure 1.

FIGURE 3
Elevated Blood Lead among Men Age 20 and Older,
U.S. Average Annual, 1988-94



Source: See Figure 1.

Another example of the relationship between income and health is the level of lead in the blood. Elevated lead levels are associated with decreased reaction time, memory loss, anemia, and kidney damage.[8] Lead can be absorbed by breathing air contaminated with lead particles, drinking water from lead pipes, and eating food grown in lead-containing soil. Adults are most likely exposed to lead in work sites such as refineries, battery manufacturing plants, and gasoline stations. From 1988 to 1994, more than 13 percent of poor men had an elevated blood lead level, which was 1.8 times more common than near poor men, 2.8 times more than middle income men, and almost 6 times more than high income men (see Figure 3).

People with higher income have access to better living conditions. They also have greater opportunity to engage in health maintaining behaviors and can obtain medical care when necessary.

The association between income and health is graded, as the previous three examples show. People with low income have higher health risks than those with middle income who have higher health risks than those with high income. It is not simply an effect of poverty—that poor people have poor health and everyone else is fine. For example, in the first of two Whitehall studies of British civil servants conducted during the 1970s and published in 1984, the risk for heart disease mortality increased steadily as the civil service level fell (see Figure 4).[9]

That income is a key predictor of health is not surprising. It is important to note that even though the unemployment rate may be low, the number of poverty level or low wage jobs is on the rise. The proportion of workers in poverty wage jobs increased from 12 percent in 1979 to 18 percent in 1992.[10] In addition, evidence is growing that income distribution is significant for health at the population level *and* that income inequality is increasing in the United States.[11]

Work Organization

Many scientists have focused their research on the effects of different working conditions on physical and mental health. Such conditions include workload and pace, work schedule, job complexity, role ambiguity, career security, interpersonal relations, and job content.[12] Robert Karasek and Töres Theorell have spearheaded a fruitful area of research centered

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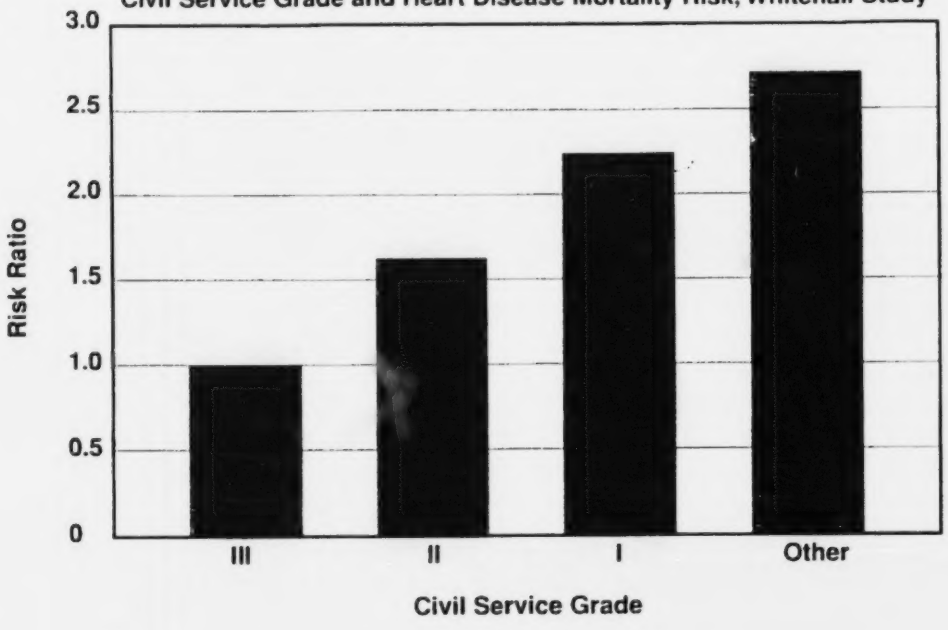
FIGURE 4
Civil Service Grade and Heart Disease Mortality Risk, Whitehall Study



Source: M. Marmot, "Multilevel Approaches to Understanding Social Determinants," in L.F. Berkman and I. Kawachi (eds.), *Social Epidemiology* (New York: Oxford University Press, 2000).

on two important dimensions of working conditions: the amount of work that employees are expected to accomplish ("job demands"); and the extent of their decisionmaking authority over how to complete the work ("decision latitude"), known as the "demand-control" model.[13] Other researchers studying the interplay of these factors have found that workers who have high demands and low decision latitude ("job strain") are at risk for a number of poor health outcomes. Job strain is particularly associated with poor psychological outcomes and cardiovascular disease.[14]

Research has identified relationships between job strain and all-cause mortality, exhaustion and depression, poor perceived health, poor mental health and physical functioning, alcohol abuse, and sickness absences.[15] Some studies have suggested that high unemployment rates result in poorer health even among those who have jobs because high unemployment causes changes in job structures that reduce the decision latitude of those workers and increase job demands.[16] Research has also found that work organization can affect the risk for work-related musculoskeletal disorders (WRMDs) to the

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extent that it influences the variety or repetition, load, and pace of work tasks[17] (see the more detailed discussion of this condition later in the chapter).

Another model of work organization that centers on job stress is the "effort-reward imbalance" model, which emphasizes individual attributes such as high coping efforts. In addition to external factors, similar to the job demands component of the model described above, the effort-reward model factors in a job rewards component, taking into consideration money, esteem, promotion prospects, and job security. The model focuses on the negative tradeoff between costs and gains at work. In a study of blue collar German men, poor promotion prospects and job insecurity (low rewards) for workers with a heavy work load and a high internal need for control (high efforts) predicted poor cardiovascular health outcomes.[18] In a study of British civil servants, employees who were competitive and over-committed and who experienced poor promotion prospects and blocked careers had more than twice the risk of developing coronary heart disease over an average five-year follow-up period.[19]

While there are some conceptual overlaps between the demand-control and the effort-reward imbalance models, statistical analyses have shown that each model is able to predict poor cardiovascular health and psychological outcomes, even after taking into account the work environment measured by the other model. Moreover, a recent Swedish study suggests a synergistic effect of the two types of exposures on health outcomes.[20]

Thus, considerable evidence now links psychosocial exposures at work to precursors of heart disease or to heart disease itself. Researchers suggest that these work exposures may help explain the widening gap in heart disease mortality across social classes in some industrialized countries over the past 40 years. The driving factor may be trends in work organization associated with the global economy, such as increasing income disparities between high skill and low skill workers, downsizing, the growth of the contingent (or temporary) workforce, and the new management systems that emphasize lean production.[21]

Health and Pension Benefits

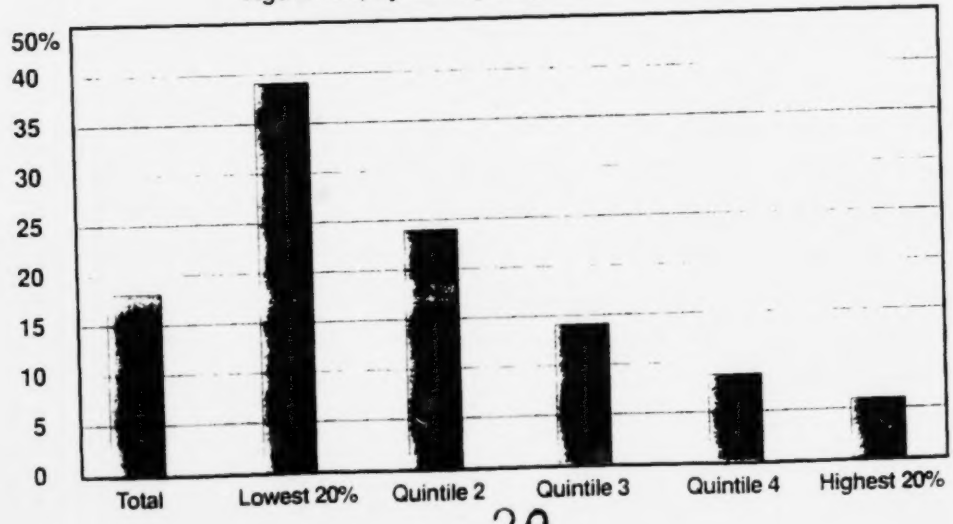
Work is the portal for a number of health-related benefits and programs, the most important of which is health insur-

ance. Employer-sponsored insurance covers about 63 percent of Americans, a proportion that, unfortunately, has been decreasing. In 1979, two-thirds (66 percent) of workers under age 65 had health insurance through their employer; by 1998, this proportion had fallen to about one-half (54 percent).[22] Another negative indicator concerning health care coverage is that the vast majority of uninsured (over 80 percent) are either workers or live with workers.[23]

What are other characteristics of uninsured workers? Most uninsured people work full-time, 71 percent compared to 29 percent who work part time. Lower wage workers are more likely not to have employer-provided health insurance than higher wage workers (see Figure 5). According to the Current Population Survey, in 1999, almost two out of five (39 percent) of the lowest wage workers (i.e., those who earned $7.00 or less per hour) were uninsured; almost one out of four (24 percent) of those earning between $7.01 and $10.49 were uninsured.

Uninsured adults are less likely to have access to preventive care than those with health insurance coverage, resulting in lower rates of blood pressure checks, routine checkups, Pap smears, dentist visits including teeth cleanings, and preventive counseling.[24] Lack of preventive care is particularly significant for the uninsured because they report higher rates of unhealthy behavior than the insured, including smoking and obesity, which place them at significantly greater risk for future disease and premature death.[25]

FIGURE 5
Percentage of Uninsured Private Sector Employees Age 21-64, by Hourly Wage Quintile, 1998



Work Schedules

Flexibility

Work schedule flexibility is an increasingly prominent feature of new economy jobs. More than one out of four workers now have some flexibility in the daily timing of their work schedule. However, schedule flexibility is often obtained by giving up other benefits. Workers who want greater flexibility must often be willing to work long work weeks (50 hours or more), non-daytime hours, irregular shifts, or an unpredictable number of hours per week, or be willing to work as a part-time employee or an independent contractor.[26]

Each tradeoff has potential implications for employee health. Working long hours can be physically taxing and stressful. Working night shifts or irregular shifts influences sleep patterns and can lead to fatigue (see the discussion below). Part-time work means a reduction in wages. Independent contractors have little job security and no benefits.

Shift Work

As the demand for service around the clock increases, the number of people working all hours is also growing. In 1999, a review of 17 studies found a link between shift work and the risk of cardiovascular disease, with shift workers having a 40 percent increase in risk.[27] The authors of the review suggest three possible mechanisms that connect shift work and cardiovascular disease. The first is the mismatch of the circadian rhythms and sleep, which may have implications for nutrition and the digestion and absorption of food. Enzyme activity and stomach emptying into the small intestines are tied to circadian rhythms. If shift workers eat meals at different times than they normally would, the lack of synchronization between the body's circadian rhythms and the ingestion of food could have health consequences. One study found that cholesterol levels were higher in people who ate more of their daily food at night.[28] According to other research, shift work modifies the rhythms of the circulatory system, which can contribute to disordered sleep.[29]

The second possible mechanism that may connect shift work to poor cardiovascular health outcomes is the disruption

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of family and social life. Working odd hours certainly decreases opportunities to eat meals with family and friends and to participate in recreational activities. This disruption can lead to stress and social isolation. Social isolation or a lack of social support has been tied to increased risk for chronic diseases. As discussed next, stress has also been connected to different disease outcomes.

The third potential mechanism is behavioral changes adopted by shift workers to cope with their unorthodox schedule. Several studies have reported that shift workers smoke more than day workers.[30] Other behavioral differences include dietary practices and exercise. There is mixed evidence that shift workers tend to have higher fat or higher carbohydrate diets, less exercise, and more weight problems than day workers.[31]

Workplace Stress

A large body of research ties general stress to poor health. In 1956, Hans Selye, in what is now considered a classic book, described the body's reaction to stress in three stages.[32] The first is a state of alarm that is characterized by high levels of hormone production, energy release, muscle tension, and increased heart rate. The second is adaptation, where the body works hard to maintain homeostasis. The third stage is exhaustion. Subsequent research tied the stress response to the immune system. What is currently known about stress suggests that the immune system will respond to stressors when they are a relatively unusual occurrence. However, if the stressors are prolonged, they will have a negative effect to the extent that chronic stress depletes the immune system's ability to fight infection.[33] These are, of course, brief and simplified statements about a large and complex body of research. Furthermore, an individual's personality influences the body's response to stressors in the environment.

Stress at work is increasingly common. In a recent report of a random telephone survey of more than 600 workers, one-third of the respondents said that they have no down time at work.[34] One-third reported that they eat lunch while they work. One-fifth said that workplace pressures make them feel that they must go to work even if injured or sick. One-sixth reported that work causes them to lose sleep at night.

A large area of research overlaps the work organization literature cited above regarding job strain and job demands. As discussed, work that has heavy demands but little control or no rewards is associated with poor health. Work can be a source of stress for a variety of other reasons such as inadequate pay, excessive hours, job insecurity, and unpleasant interpersonal relations.

Stress and Work Absence

According to the BLS Survey of Occupational Injuries and Illnesses, 3,418 cases of occupational stress were reported in 1997. The median absence from work for these cases was 23 days, more than four times the level of all nonfatal occupational injuries and illnesses. Further, more than 40 percent of these cases resulted in 31 or more lost work days, compared with one-fifth for all injury and illness cases.[35] It is important to note that these figures are almost certainly significant underestimations of the true amount of workplace stress because most worker compensation systems actively discourage claims for this medically ill-defined entity. A large number of people have medical manifestations that are not easy to link to their work (e.g., high blood pressure and heart disease) or have clear-cut mental health symptoms from work but do not think to claim worker compensation or are discouraged from doing so by the system.

Cardiovascular Disease

In much of the literature, workplace stress is measured by job strain or effort-reward imbalance, described in the section above on "Work Organization." As mentioned, poor work organization has been linked to poor cardiovascular health. Work load, work pressure, and lack of job control have all been connected to increased blood pressure.[36]

Alcohol Consumption

A body of research literature explores the relationship between occupational stress and consumption of alcoholic beverages. The results of some studies suggest that stress increases alcohol consumption or problem alcohol behaviors.[37] These

studies typically use the stress-alienation model to explore the relationship between work and alcohol. According to this model, modern organizations create a sense of powerlessness in their employees, and individuals seek to relieve this feeling by drinking.[38]

Occupational Health

Work-Related Musculoskeletal Disorders

WRMDs affect the muscles, tendons, ligaments, and nerves and are due to soft tissue sprain, strain, or inflammation caused by repeated and forceful motions or awkward postures. These conditions account for the largest single category of lost-time occupational injury/disease episodes recorded by the Occupational Safety and Health Administration (OSHA). They are also associated with the biggest category of worker compensation claims.[39]

Annual risks of these disorders over the period 1992-96 ranged from almost 40 per 1,000 employees in the highest risk sectors (such as airline baggage handlers) to less than 5 per 1,000 employees in businesses with fewer heavy manual tasks (such as those in the financial and banking sectors). In 1995, WRMDs associated with repeated trauma accounted for 308,000 cases, or 62 percent, of the new illness cases in private industry.[40]

Several recent studies of occupational low back pain have examined the joint influences of physical workload and pychosocial factors.[41] The studies report that both factors have independent roles in the etiology of occupational low back pain. Otherwise, the relative contributions of physical and psychological factors to the broader category of musculoskeletal disorders are less well understood. Workplace stress could be an important factor in increasing an employee's risk for WRMDs by affecting attitude, motivation, and behavior, leading to risky actions.[42] However, there are also likely physiologic links between the stress response and involuntary muscle tension that contribute to injury.

Exposure to Toxins

In addition to subjecting employees to physical exertion and repetitive motions, workplaces can expose them to toxic

substances. J.P. Leigh and colleagues estimated that between 5 and 10 percent of new cases of cancer, coronary heart disease, cerebrovascular disease, and chronic obstructive pulmonary disease among working-age people can be attributed to occupation.[43]

WORK AND FAMILY HEALTH

The previous sections documented several ways that work can influence an individual's health. What are the implications of work for family health, particularly that of children? While it is not within the scope of this report to summarize and comment on the vast literature on childhood development, a few connections can be drawn between work and children's health: (1) the importance of socioeconomic status (SES) across the life course; and (2) the role of workplace benefits that support adult responsive caring (e.g., family leave and sick leave).

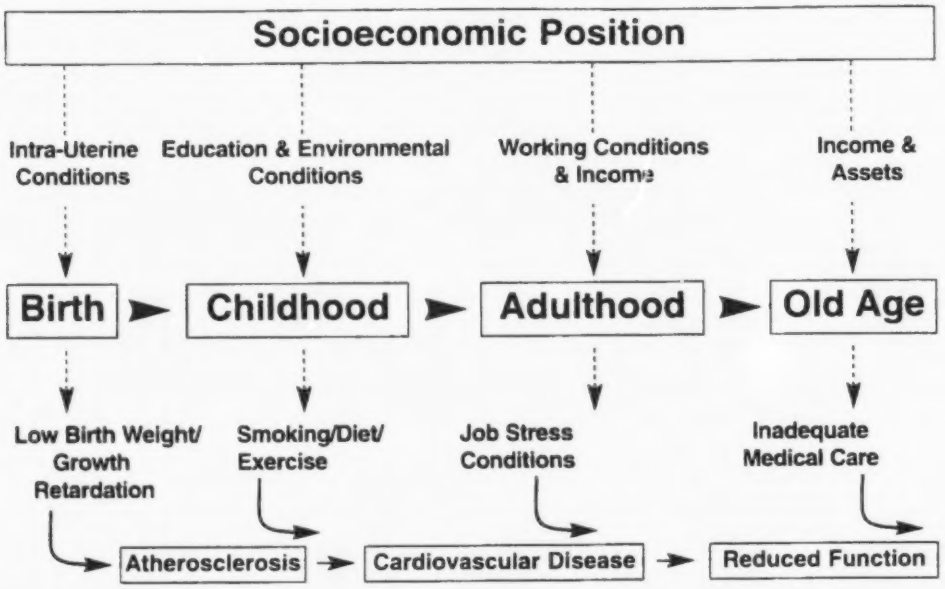
Socioeconomic Status Across the Life Course

As discussed, income is one of the strongest predictors of health status. Researchers are increasingly coming to understand the importance of the influence of income and other indicators of SES from a life course perspective; that is, the SES of an individual's childhood and adolescence seems to have strong implications for his or her health in adulthood. Figure 6 illustrates how the SES of a family can influence a child's health and how that effect can accumulate over a lifetime.[44] Just as income can impact adult health through access to health maintaining and promoting material conditions (e.g., safe neighborhoods and nutritious foods), so these material conditions can influence child development. There is strong evidence that a child's chances of academic achievement and adult literacy are tied to the influences of family SES during early childhood years.[45]

Family Leave and Sick Leave

Adequate family leave after birth or adoption could be critical to support a key stage of life. The first three years are increasingly seen as the crucial foundation for adolescent and adult mental and physical health and social development. The

FIGURE 6
The Life Course of the Influence of
Socioeconomic Status and Cardiovascular Disease



Source: *Social Epidemiology*, edited by L.F. Berkman and I. Kawachi, Copyright 2000 by Oxford University Press, Inc. Used by permission of Oxford University Press, Inc.

Carnegie Corporation summarized the research in a report on programs to support early childhood development with the following statements:

> First, the brain development that takes place during the prenatal period and in the first year of life is more rapid and extensive than we previously realized.
>
> Second, brain development is much more vulnerable to environmental influence than we ever suspected.
>
> Third, the influence of early environment on brain development is long lasting.
>
> Fourth, the environment affects not only the number of brain cells and number of connections among them, but also the way these connections are "wired."
>
> And fifth, we have new scientific evidence for the negative impact of early stress on brain function.[40]

Family leave policies can support the establishment of critical parent-child relations in the first year of life. Providing the economic means through public or workplace policies to take more than six weeks of paid disability leave can help to pro-

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long breastfeeding, for example. Breastfed babies appear to have lower risk of chronic diseases during childhood and adolescence.[47]

Sick leave policies can allow parents to take time off to care for their young children when they are ill. Parents without sick leave are less likely to provide such care[48] and are sometimes forced to take their sick children to day care, exposing other children to illness.[49] More than one-third (36 percent) of parents whose children have chronic illnesses are unlikely to have sick leave benefits.[50] Almost two out of five (38 percent) parents living in poverty do not have sick leave.

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3

Policy Options

WHAT CAN BE DONE?

Strategy I: Focus on the Individual and the Job

Health Education

One individually focused measure is for government and employers to provide additional health education. For example, people could be given more information about ways to prevent disease and to improve individual well-being, including information about the benefits of regular screening tests for cholesterol, blood pressure, and cancers and how to prevent obesity. This strategy emphasizes individual choice concerning health behaviors such as smoking, diet, and exercise. Increased education about the adverse effects of smoking has led to a reduction in the percentage of the population that smoke. Educational programs about the negative health impacts of smoking and obesity should be increased. These and other health education programs such as stress management classes could be disseminated in the workplace or more broadly by public health agencies.

The downside to this strategy is that it is unclear if it can have long-term intergenerational effects. Some research on the social determinants of health suggests that the best guarantee for good health is to have well-educated parents with healthy jobs, i.e., low exposure to toxins. "Choosing" one's parents well usually means that the person grows up in a safe neighborhood with a balanced diet and access to quality schooling. However, a focus on the individual approach does not address the root causes of work-related ill health for any individual starting off without these advantages.[1]

Adjusting the Job

A related strategy is for employers to focus on the job. There are three approaches to adjusting jobs. One is to change the job physically. Employers can undertake ergonomic assess-

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ments of each type of job in their firms. These assessments can inform adjustments to the job environment and help prevent or decrease workplace injuries. A second approach is to change the job organizationally. By addressing time pressures and monotonous tasks, employers can reduce stress and increase worker control. A third approach is to change job culture. Joint labor/management health and safety committees have been shown to promote better health outcomes via joint problem solving and trust building.[2]

Strategy II: Encourage the Business Sector to Adopt Supportive Policies

Training Programs for Recruitment and Mobility

By providing training programs, employers can ensure that prospective employees learn the requisite skills for specific vacancies and that current employees gain skills for promotion within the company. This strategy addresses the "wage connection to health." People without jobs would have a means to get a job; people with jobs would have a means to improve their work circumstances.

Voluntary Private Sector Leadership by Example

Voluntary private sector leadership by example and advocacy can include funding studies that synthesize the evidence, such as the commissioning of this report by the National Policy Association's Committee on New American Realities. Voluntary leadership can also coordinate "Good work, good health" coalitions among companies and unions. These coalitions can provide mutual support and facilitate learning from success stories.

Strategy III: Develop and Expand Government Policies

Earned Income Tax Credit (EITC)

The EITC, the country's second largest means-tested program that aids the poor, goes primarily to low income families. The program is essentially a refund of payroll tax withholdings. It has had enormous income redistributional effects and may have improved the health and well-being of the poor.

Living Wage/Minimum Wage

A minimum wage policy is one approach to alleviating poverty by ensuring that anyone with a job has an adequate income. Because the national minimum wage has not kept pace with the cost of living, the concept of a "living wage" has been introduced for workers in companies receiving local government contracts or subsidies. A living wage for these workers ensures an income sufficient to meet subsistence needs for food, shelter, clothing, transportation, and child care in those local jurisdictions.[3]

Using previously published studies that modeled the health and educational attainment effects of income, researchers with the San Francisco City and County Departments of Health recently released a study on the health and educational effects of a proposed living wage policy in San Francisco.[4] Figure 7 shows the estimated effects on mortality for men and women, depending on family income. The figure indicates that men and women with the lowest family income have the greatest health gain from the living wage policy. Figure 8 shows the estimated change in the likelihood of high school graduation. Again, people with the lowest current family income are projected to have the most educational benefit. Children of families with annual incomes of $15,000 would have more than a 40 percent increased chance of graduating from high school under a living wage policy.

Living Wage Laws

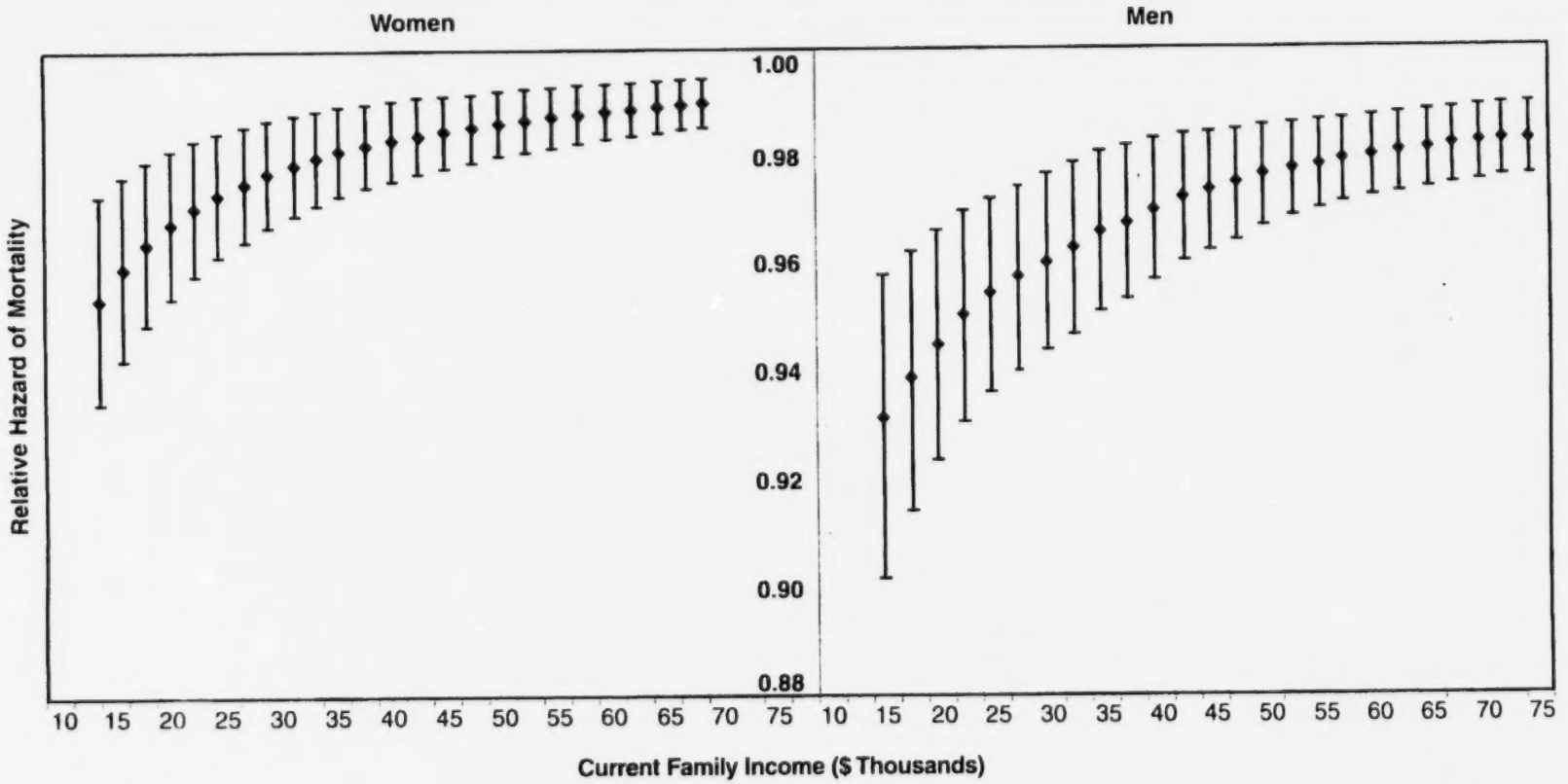
"Devoted to the principles that people who work full time should not live in poverty, the living-wage campaign won its first success in Baltimore, Maryland, in 1994, and has since spread to 81 other cities and counties, as well as universities and school boards. Living-wage proposals are pending in dozens of other localities, from Santa Monica, California, to New York City.

"Driving the movement is new evidence that may dispel early fears that the social benefit from higher wages would be wiped out by job cutbacks among businesses subject to living-wage laws. Published this year, a study of 36 cities with living-wage laws—conducted by David Neumark, a Michigan State University economics professor and an early skeptic of such laws—found that the slight job losses caused by the higher wages are more than offset by the decrease in poverty among working families. The impact on businesses and governments is very small, according to Robert Pollin, an economics professor at the University of Massachusetts at Amherst."*

* *Time*, April 8, 2002, p. 50.

FIGURE 7

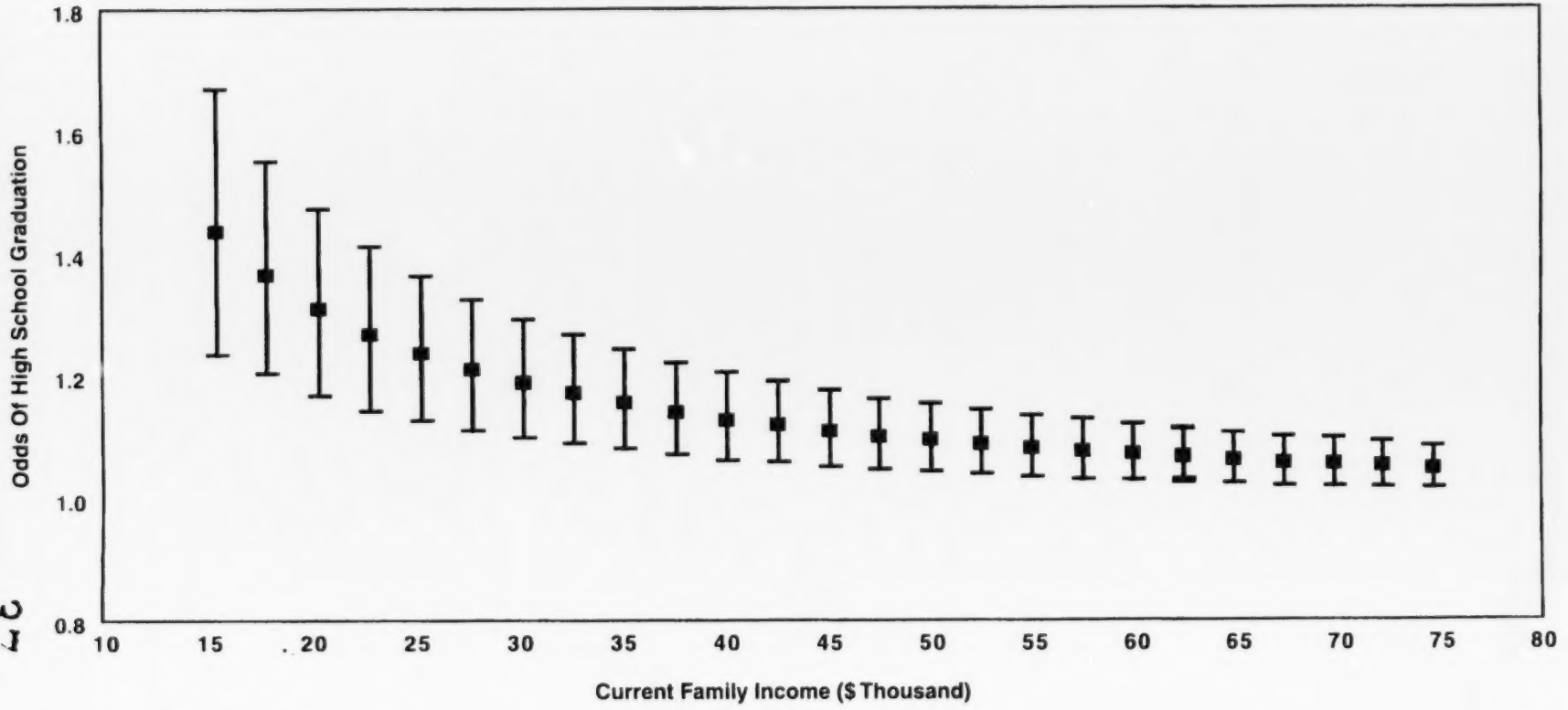
Estimated Mortality Risk Reduction Due to the Living Wage among Full-Time Workers Age 24-44



Source: R. Bhatia and M. Katz, "Estimation of Health Benefits from a Local Living Wage Ordinance," *American Journal of Public Health*, Vol. 91, No. 9 (2001).

FIGURE 8

Change in the Likelihood of High School Graduation among Children Age 0-15 Years in Families with Full-Time Workers Benefiting from the Living Wage



Source: See Figure 7.

Health Insurance

As discussed, the majority of people without health insurance coverage are employed. However, most of them work for employers who do not provide a health plan, or they are not eligible for their employer's plan.[7] Employers could be given incentives to expand their coverage of health insurance. Providing tax credits to employers is one way for public dollars to absorb a portion of the extra costs that small employers bear in the current health insurance market.

Family Leave

Most industrialized welfare states provide ample maternity, paternity, or other parental leave during the first year of childhood. In Norway, after the birth of a child, parents may share 52 weeks of leave with an 80 percent wage replacement or 42 weeks with full wage replacement. In Sweden, parents may share one year of leave with almost full wage replacement, followed by 3 additional months at a lower rate. In Denmark, mothers may have 28 weeks of maternity leave, and fathers may have 1-2 weeks of paternity leave. After these leave periods, the parents may share 10 weeks of parental leave. Compensation is at a high proportion of wages and depends on the employer. Other European countries provide 3-5 months of maternity leave, paying 80-100 percent of wages during that time. In part as a result of the overwhelming scientific evidence pointing to the critical years from birth to age three for child development,[5] Canada adopted a new leave policy on January 1, 2001, that provides up to 12 months of leave with 55 percent of pay.

Almost all of the European leave programs are funded through social insurance programs or general tax revenues. Employers are not mandated to provide wage replacement for their employees. In the mid-1990s, annual family leave expenditures per employed woman were about $900 in Sweden and Finland and about $600 to $700 in Norway and Denmark (1990 U.S. dollars). France spent $375 per employed woman.

Most people in the United States support paid parental leave. One study found that four out of five adults support leave that allows parents to stay home from work to care for their babies.[6]

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Universal Child Care

France and Belgium provide full-day child care centers and some publicly supervised family day care centers. Children who are two-and-one-half to three years old enter preprimary programs within the public education system.

Early childhood education and child care services in European countries are funded largely by the government. Care for very young and preschool children is partially funded through parental copayments, covering an average of 15-25 percent of costs. Total spending on direct child care in the mid-1990s was about $2,000 per child under age 15 in Sweden and Denmark. This figure covered most of the children under age 7 and many school-age children in after-school care. In France, the figure was $1,000 per child under age 15 and served almost all three- to five-year-olds and about one-fourth of children under age three. For such a policy to be supported in any society, however, there must be a widely held social view that the nation's children are everyone's—not just their parents'—responsibility.

CONCLUSION

The evidence reviewed points to major, ongoing changes in the nature of work, as well as in the workforce, that portend effects on employee health. Not all of these effects are negative, and many are impossible to predict. Nevertheless, there is cause for concern. The policy choices for Americans are not simple, given the country's history of a relatively laissez-faire public sector approach to work.

A critical first step is for enlightened and informed employers and employees to become acquainted with the issues and trends described here. Then they must act together in a civil society coalition—such as R.D. Putnam has proposed in *Bowling Alone: The Collapse and Revival of American Community*—to develop creative responses that address threats to health from the changing work and workforce characteristics of the new economy. Without such a proactive informed citizens' coalition, it is doubtful that many workplaces, or the public sector agencies that regulate them, will have the foresight and political will to ensure that work in America in the future is truly "good work" that enhances health and well-being.

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Further Implications for Policy

by James A. Auerbach

Director
Committee on New American Realities

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There is growing recognition that America's policies governing work and employment are outdated. Most of them, according to Thomas A. Kochan, Co-Director of the MIT Institute for Work and Employment Research, were designed for the workforce and employment setting in which they were first introduced—the industrial economy of the 1930s. Policies governing unemployment insurance, worker compensation, wages and hours, and labor relations assumed that work took place in a large industrial firm competing in domestic markets. Employees were expected to fall into two distinct classes, salaried managers and hourly workers, with different roles, responsibilities, and rights. The typical, or perhaps ideal, worker was viewed as a loyal, long-term employee, a male breadwinner with a wife at home who attended to family and community affairs.[1]

These policies and the institutional arrangements and practices that grew up around them worked for many years because they were well matched to the nature of the economy and the workforce of the time. Together they helped the country grow out of the Great Depression, manage through World War II, and support growth in the postwar economy. Within this framework, business, labor, and government fashioned a social contract at work in which loyalty and good performance were rewarded with gradually improving incomes, employment and retirement security, and family welfare.

Kochan notes, however, that "The nature of work and the makeup of the workforce has changed dramatically since these policies were put in place to the point where there is now a mismatch between the reality of work and family life today and the policies, labor market institutions, and organizational practices that govern work. The old social contract has broken down, but a new one better suited to today's realities has yet to emerge."[2]

WHAT IS, AND IS NOT, WORKING TO IMPROVE THE BALANCE BETWEEN WORK, FAMILY, AND HEALTH

Work-Life Programs

Despite the lack of a new comprehensive social contract that would reflect the modern realities of work and family life, some companies and unions are making efforts to develop

work-life programs. In 1997, the Work & Family Connection, together with the Whirlpool Foundation and *Working Mother Magazine*, conducted the nation's first survey to find out how businesses evaluate their work-life programs. Such programs include flexible work arrangements, employee assistance programs, onsite child care centers, part-time options, wellness/prevention programs, paid maternity/paternity leave, fitness centers, assistance for adoption, elder care support programs, and domestic partner benefits. Respondents from 153 companies reported on 40 different programs, policies, and practices.[3]

The survey matched these programs and practices to different results, such as reduced absenteeism and turnover, enhanced employee or customer satisfaction, and lower health care costs. The overwhelming number of programs that assist employees with child care increased employee satisfaction and morale. Helping workers care for children when regular child care was not available also increased employee commitment, participation, and productivity. A majority of the respondents believed that child care assistance programs such as onsite child care centers helped recruit workers to their companies. Many of the work-life programs led to reduced absenteeism and turnover. Workforce diversity efforts were improved through diversity training and domestic partner benefit programs. In addition, wellness/prevention programs, fitness centers, prenatal care, and flexible or cafeteria benefits were seen as effective ways to decrease a company's health care costs.[4]

Family Medical Leave and Paid Leave

Many current federal programs, such as the Family and Medical Leave Act (FMLA), are viewed by organized labor and other organizations as providing important, but inadequate support for achieving a sustainable work-life balance. The FMLA grants workers unpaid time off for births and child adoption and to recover from an illness or care for an ill family member. But the law applies only to companies that employ 50 or more people, leaving out almost half the U.S. workforce. As a result, unions and their allies from religious groups and advocates for women and low income workers are campaigning at the state level to extend FMLA benefits to smaller firms and to have paid family and medical leave for all workers. Paid

family leave currently is available to just 2 percent of workers. In a 1996 evaluation of the FMLA, the Commission on Leave found that two-thirds of all employees who did not take the family or medical leave they needed cited the prospect of lost wages as the reason.[5] Surveys indicate that four out of five Americans support paid parental leave and that 85 percent favor paid leave to care for a new child or a seriously ill family member.

Unemployment Insurance

In June 2000, the U.S. Department of Labor issued regulations that allowed states to extend unemployment insurance (UI) benefits to workers on temporary leave to care for infants and newly adopted children. "Baby UI" benefits would be funded by employer payroll taxes, as is regular UI, except that Baby UI would not affect an individual employer's tax rate.[6]

However, UI largely excludes part-time workers from coverage. A Sloan Foundation-funded report, titled *Laid Off and Left Out,* notes that when the UI system was designed in 1935, it was assumed that men worked full time to support their families, while women stayed at home to fulfill family care and household responsibilities. It was explicitly believed that part-time women workers did not work to support their families. The authors of the current report state: "In terms of the contemporary labor market, the rationale underlying the exclusion of part-timers from UI has no continuing validity. Perhaps more than any other group, part-time workers suffer as a result of outdated UI eligibility rules based on the misconception that part-time workers merely supplement family income. If this concept of part-time work were ever true, it is certainly false now. In households with a part-time worker, an average of 24.1 percent of all household income is earned by a part-timer."[7]

Child and Elder Care

Studies repeatedly have shown that good quality child care helps children enter school ready to succeed, improve their skills, and stay safe while their parents work. However, many families cannot afford quality child care. The Child Care and Development Block Grant (CCDBG), the major federal child care program in the United States, makes grants to states and

Native American tribes to assist low income families with child care. The grant is up for reauthorization in 2002. The Children's Defense Fund is urging Congress to invest $20 billion in the CCDBG over the next five years to serve an additional two million children and families who need help paying for child care.[8]

Funding from the Temporary Assistance for Needy Families (TANF) program has also been important in supporting state child care assistance efforts. As welfare roles decreased during the booming economy of the 1990s, states increasingly relied on TANF funds to help pay for child care assistance.

People over age 65 are the fastest growing segment of the nation's population and are dramatically changing society's needs. Quality, affordable elder care is one of these increasing needs. By 2005, as many as one out of five Americans will be elderly, and almost 40 percent of the U.S. workforce will be in the prime age group (40-54) who will be caring for aging parents. Most of the informal care for the elderly is provided by working women who find themselves sandwiched between the needs of caring for the young and the elderly.[9]

In 1993, about 20 percent of large employers answering a Hewitt Associates' survey reported that they offered elder care benefits. By 1999, that figure had jumped to 47 percent. But the graying of America is not the only reason that elder care is emerging as a priority issue in the workplace. Another is the cutback in the length of hospital stays covered by health insurance, placing more responsibility on families to tend to the old and the sick.[10]

In response to surveys that show child and elder care as top priorities and given management's concern over absenteeism, a growing number of businesses and unions are negotiating child/elder care funds financed by employer and union contributions. In addition, these programs usually include a flexible time-off policy that allows parents to attend to the needs of their families.[11] The examples on page 36 show labor-management partnerships that address services for working families.

A CALL TO ACTION

Lotte Bailyn, Robert Drago, and Thomas Kochan issue a "Call to Action" at the conclusion of *Integrating Work and Family Life*, urging all parties—employers, employees, unions, professional

New York State Health Workers' Union: A Labor-Management Partnership for Child-Care Funding

"The 1199 Health and Human Service Employees Union (HHSEU) in New York State collaborated with health services employers to provide a special Child Care Fund for its members. The fund supports a child-care resources and referral service, as well as summer camp, cultural arts, after-school, daycare vouchers, and holiday programs for over 7,000 children up to seventeen years of age. The program was negotiated and implemented by the union with the management of 168 hospitals, nursing homes, and health-care facilities at which its members work.

"The fund is governed jointly by labor and management, both of which contribute funding. In addition to the general fund contributions, each employer and its union membership have formed local labor-management child-care committees which assess their members' needs and make recommendations for policies and programs. This governance structure has received praise from the community for its grassroots design and flexibility.

"The Child Care Fund was designed to meet the needs of 1199 HHSEU members, who earn between $22,000 and $28,000 annually from health-care jobs, including housekeepers, physician assistants, nurses, food servers, pharmacy assistants, and orderlies. Four-fifths of Local 1199 members are African American, Caribbean, and Latino."*

* Bailyn, Drago, and Kochan, *Integrating Work and Family Life*, p. 28.

UAW-Ford Partnership

"The United Auto Workers (UAW) and Ford Motor Company were among the leaders in negotiating for the funding of child-care centers. The issue was included in their 1984 contract, and the first child-care facility was opened in 1993. Similar child-care facilities now exist in UAW partnerships with all three major American automakers.

"Plans under the UAW-Ford partnership now include expansion to a broader range of services for working families, through a family-service and learning center that is scheduled to open in June 2001. This center will offer services such as teen programs, after-school tutoring, grants to child-care providers to extend hours and improve quality, legal services, and adult education. It will offer a location for bringing retirees and children together, and for building community ties. In addition, using a federal grant, the UAW is sponsoring a child-care worker apprenticeship program that offers those who complete it a journeyman card and higher wages.

"The UAW-Ford family programs are seen by Ford management as an enhancement to employee recruitment and retention, as well as a key contribution toward a 'focused and engaged workforce.' They are seen by the UAW as essential help in bridging the gap between workplace demands and family obligations. A decade of success in building and running employer-sponsored child-care centers is allowing the partnership to expand into innovative family and community services."*

* Bailyn, Drago, and Kochan, *Integrating Work and Family Life*, p. 29.

associations, and government—to work together to improve work and family integration. The authors encourage these groups to strive to achieve the following high priority objectives:

- **Work Redesign**—Managers, employees, and employee representatives need to come together to create new work systems, processes, and incentive structures to meet the dual agenda of improving work and organization performance and personal and family life.
- **Paid Leave and Family Care**—American families need access to a universal paid leave policy and support for family care over the life course.
- **Reduced Hours and Flexibility**—American workers, especially parents, need more options for reduced hours and more flexibility in their work schedules.
- **Women in Leadership Positions**—Although work and family are clearly not merely concerns of women, women often have more personal experience than men in dealing with these issues and are more likely to give them priority. Corporations, unions, and government thus should increase the pace of moving women into high-level positions.
- **Worker Voice**—Employees at all levels should have a voice in shaping workplace policies and practices that facilitate the integration of work and family life. This requires updating and strengthening labor law.
- **Community Empowerment**—Greater investment in community institutions is needed to create a durable infrastructure for family support, especially in the areas of child and elder care.
- **Work-Family Councils**—Employers, unions, communities, and government should create state or regional Work-Family Councils and an annual National Summit to encourage best practices on work-family integration and to promote these issues on the national policy agenda.[12]

Even if some of these objectives are not politically feasible in the present political environment, they provide the basis for a public dialogue to confront the challenges of balancing work and family life. Whether the proposals are for universal health care, affordable child care, or flexible work schedules, all are critical issues that cannot be ignored. The Committee on New American Realities believes that there is an urgent need to debate policy options and to adopt programs that will promote

desirable workplaces, stable families, and good health. This report points the way toward improved health for working families.

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The NAR Committee meets twice a year and is supported by member contributions. For more information, contact James A. Auerbach, NPA Senior Vice President and Director, NAR Committee (202) 884-7627 or npajim@npa1.org.

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